

CLAIMS

1. A titration method for small quantities of liquid wherein
 - a) a drop (1) of the analyte held together by its surface tension is applied to a substantially flat surface (7) of a solid, preferably a solid chip (5),
 - b) a titration quantity (17) of the titrant, which is smaller than the quantity of the analyte drop (1), is brought in contact with the analyte drop (1) for the reaction,
 - c) a characteristic quantity for the reaction between titrant and analyte is measured during and/or after the reaction, and
 - d) if necessary, steps b) and c) are repeated.
2. The titration method according to claim 1, wherein during the reaction between analyte and titrant a surface acoustic wave is launched in the direction (10) of the analyte drop to promote the reaction between titrant and analyte or to thoroughly mix the analytes and titrants.
3. The titration method according to claim 2, wherein the titration quantity (17) of the titrant on the solid surface (7) is moved towards the analyte (1).
4. The titration method according to claim 3, wherein a reservoir drop (3) of the titrant is brought onto the solid surface (7) which is held together as a result of its surface tension and the

titration quantity (17) of the titrant is separated from this reservoir drop (3) for titration and is supplied to the analyte drop (1).

5. The titration method according to claim 4, wherein the movement of the titration quantity (17) is triggered by the momentum transfer of a surface acoustic wave.
6. The titration method according to any one of claims 2 to 5, wherein one or a plurality of interdigital transducers (9, 11, 13) on a piezoelectric solid surface (7) are used to generate the surface acoustic wave or surface acoustic waves with a direction of emission of the surface acoustic waves in the direction of the desired momentum transfer.
7. The titration method according to any one of claims 1 to 6, wherein the drop (1) of the analyte is brought onto an analysis point (15) on the solid surface (7) whose surface is more strongly wetted by the analyte than the surrounding solid surface (7).
8. The titration method according to claim 7, insofar as this is directly or indirectly related to claim 4, wherein the reservoir drop (3) is applied to an anchor point (16) on the surface (7) of the solid (5), whose surface is more strongly wetted by the titrant than its surrounding solid surface.
9. The titration method according to any one of claims 7 or 8, insofar as these are directly or indirectly related to claim 4, wherein the titration quantity (17) of the titrant is guided

from the reservoir drop (3) of the titrant applied to the solid surface (7) on a path (18) to the analyte drop (1), wherein at least part of the surface of the path from the titrant is better wetted than the surface surrounding the path.

10. The titration method according to claim 9, wherein the titration quantity (17) of the titrant is connected from the reservoir drop (3) to the analyte drop (1) over a path (18), which is connected to the anchor point (16) and/or the analysis point (15), wherein the connection (14, 12) comprises a region which is so narrow that, as a result of its surface tension, the reservoir drop (3) on the anchor point (16) does not leave the anchor point (16) without the action of an external force.
11. The titration method according to claim 4 or any one of claims 5 to 9, insofar as these are directly or indirectly related to claim 4, wherein the reservoir drop (3) is moved at least once over at least one region (41) of the surface (7), which is more strongly wetted by the liquid than the surrounding surface, wherein the area of this region (41) is smaller than the contact area of the reservoir drop (3) with the surface in order to separate a titration quantity (17) from the reservoir drop (3).
12. The titration method according to any one of claims 1 to 11, which is carried out in a climatic chamber to control the thermodynamic boundary conditions.
13. The titration method according to any one of claims 1 to 12, wherein a surface acoustic wave is

launched in the direction (10) of the analysis point (15) during and/or after the reaction between titrant and analyte (1) and the change in one or a plurality of parameters of the surface acoustic wave as a result of the interaction with the liquid at the analysis point (15) is measured.

14. The titration method according to any one of claims 1 to 13, wherein the reaction heat is determined during the reaction between titrant and analyte.
15. The titration method according to any one of claims 1 to 14, wherein the characteristic quantity in step c) comprises the electrical conductivity.
16. The titration method according to any one of claims 1 to 15, wherein the characteristic quantity in step c) comprises a colour change.
17. The titration method according to any one of claims 1 to 16, wherein the characteristic quantity in step c) comprises the pH.